

extending in the second axial direction and bridging all predetermined break lines (3), and with each second additional metal surface (5) extending in the first axial direction and bridging all second predetermined breaking lines (4), so that breaking of the substrate along the first and second predetermined break lines (3, 4) is only possible after the first and second additional metal surfaces (5, 6) have been broken away.

In order to enable the additional metal surfaces bridging the predetermined first and second break lines (3, 4) to be broken away after treatment, these additional metal surfaces are provided on first or second margin areas (1''', 1'') which are defined by an additional external break line (4', 3') in the substrate in between the respective additional metal surfaces (5 or 6) and the array of integral adjoining panels (1'). Only after these margin areas (1'', 1'''), with their additional metal surfaces (5, 6) having been broken away, is the multiple substrate "open" for breaking the array of adjoining panels along the predetermined break lines (3, 4).

Practice has proven that unwanted breaking of the substrate along the breaking lines (3, 4) can be avoided during treatment, and there is no need for the breaking lines at the margin areas to be different from the breaking lines in between the adjoining panels.

The figures of the present application show preferred embodiments of the invention in which the additional peripheral or outer break lines (4') of the first margin areas (1''') are also bridged by additional metal surfaces (5) of the second margin areas (1'') so that additional protection against unwanted breaking is obtained, as a two step opening of the substrate is required, meaning breaking of the substrate along the lines (3, 4) and also along the break lines (4') is only possible after the margin areas (1'') have been broken away.

Applicant submits that the prior art does not teach a substrate at which the predetermined break lines between the adjoining panels of an array of panels are bridged by additional outer metal surfaces at margin areas or at the periphery of the substrate. While Gyurk and Nasu et al teach multiple substrates

with a plurality of adjoining panels forming an array of panels and having predetermined break lines in between the adjoining panels, these references do not show margin areas at the periphery of the substrate with additional metal surfaces bridging all predetermined break lines extending between the adjoining panels.

Furthermore, Nasu et al does not teach a multiple substrate with a ceramic layer, but a multilayer printed circuit board comprising a glass fiber non-woven cloth layer. Such a layer is not subjected to the danger of unwanted breaking, so that Nasu et al does not deal with the specific object of the present invention, namely to avoid the unwanted breaking of a ceramic substrate along predetermined breaking lines.

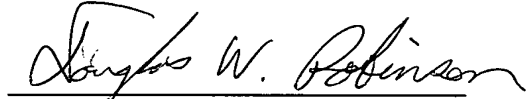
Spadafora teaches a microcircuit substrate having an array of microcircuits formed on a ceramic layer, with perforations in between the microcircuits and along the margin of the substrate. However, this known design can also not protect the multiple substrate against unwanted breaking along the perforation lines, as this design does not have the additional outer metal surfaces bridging the breaking lines in between the microcircuits. Furthermore, Spadafora does not teach the preferred embodiment of the invention, in which the first external additional predetermined break line of the first margin area or of the second margin area is also bridged by the additional metal surface of the second margin area or of the first margin area, respectively.

Based on the foregoing, Applicant submits that the claims of the present application are patentable over the art of record, and favorable reconsideration is respectfully requested.

The present Amendment is submitted within the three month period for responding to the outstanding Office Action. Applicant hereby petitions for any other extensions of time which may be required and you are authorized to charge Deposit Account No. 08-2455 any fees necessary to maintain the pendency of the present application. If any issues remain which can best be solved by a personal or telephone interview, the Examiner is

kindly requested to contact the undersigned attorney at the local telephone number listed below..

Respectfully submitted,



Douglas W. Robinson
Reg. No. 32,751

August 29, 1995
(703) 415-0100

Attorney Docket No. **A-4908.AMB/cat**